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Conference Abstract

Counting on Citizens: Unveiling Butterfly Diversity Through 30-Minute Counts

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Abstract

The *Big Butterfly Month* (BBM) is an annual citizen science initiative launched in September 2020, dedicated to monitoring butterfly populations across diverse landscapes (Big Butterfly Month Team 2025). BBM is promoted and supported by a consortium of organizations and communities like DiversityIndia (Barve et al. 2023). This program leverages the power of community participation to gather crucial ecological data, contributing significantly to our understanding of local biodiversity and conservation needs (Kelling et al. 2019, Sekhsaria and Tayyil 2022). Two primary data collection methodologies are employed: spot occurrences, which record the presence of specific butterfly species, typically shared as a record on iNaturalist or the India Biodiversity Portal, and standardized 30-minute counts. The latter, a highly replicable method, proves invaluable for assessing species diversity, population trends (Dennis et al. 2017), and relative abundances over time and across different habitats (Pollard 1977).

A core objective of the BBM initiative is the mobilization of this invaluable citizen-generated data to open-access platforms, most notably the Global Biodiversity Information Facility (GBIF Secretariat 2023). This ensures that the collected information is not only accessible to researchers and conservationists worldwide but also contributes to

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broader global biodiversity datasets, facilitating large-scale ecological analyses and informed policy decisions (Pocock et al. 2017).

The engagement strategy focused on broad reach and support, starting with promotion across BBM channels. Participation was facilitated through virtual training sessions, with video recordings shared for later review, complemented by follow-up virtual question-and-answer sessions. To maximize accessibility, a simple, spreadsheet-based data format was adopted and shared. Finally, the initiative fostered motivation and retention through recognition for top contributing individuals and regions. Success of reaching out to various regions of India is illustrated in Fig. 1.

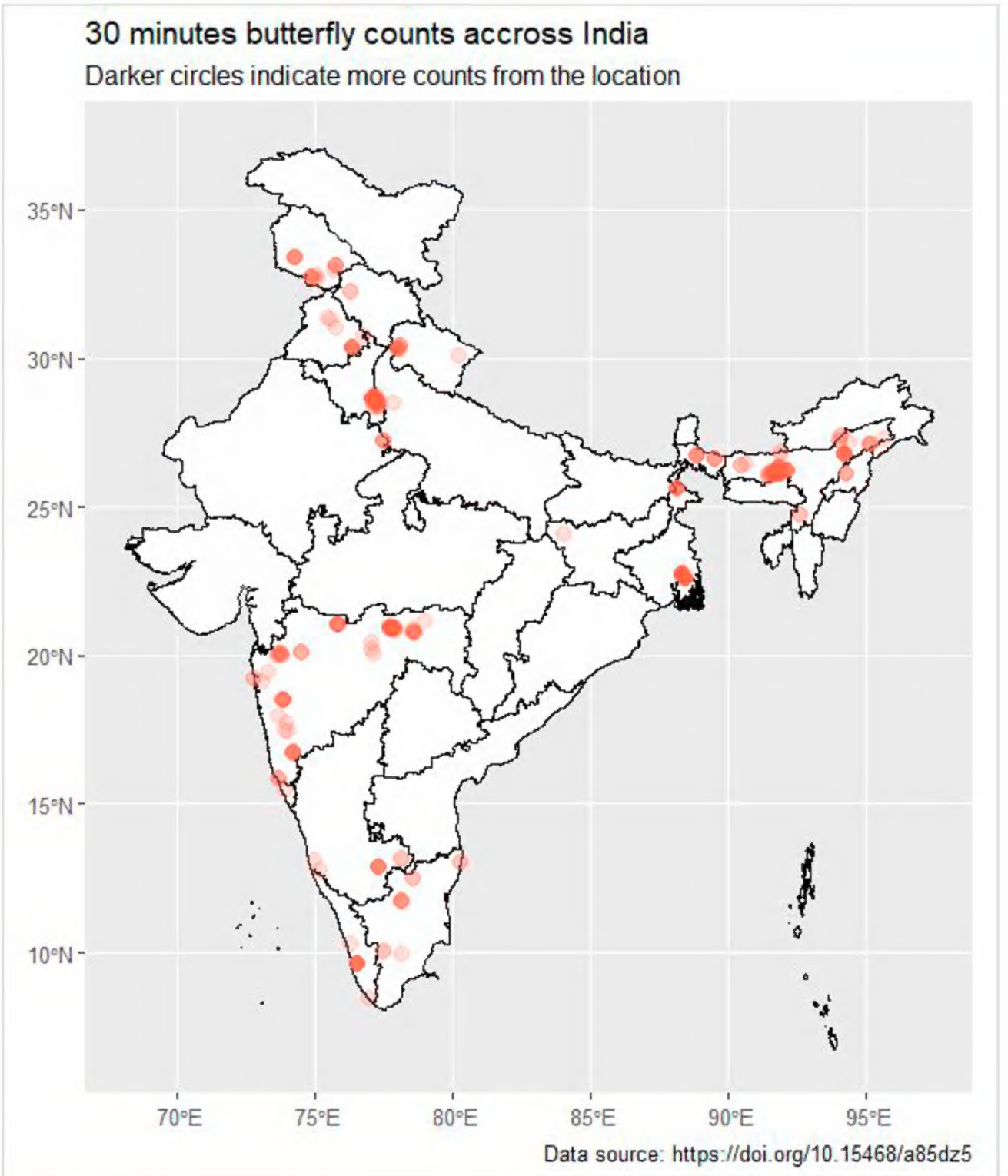

Figure 1.

Map showing locations of 30 minutes butterfly counts across India. Data from Barve et al. 2024 CC BY 4.0

The data workflow begins when data files are extracted from a series of spreadsheet attachments received via email. These data files are then read into R (R Core Team 2021), where they are merged and thoroughly checked for quality in terms of dates, scientific names and location details. To ensure proper attribution and tracking, the Open Researcher and Contributor ID (ORCID) of the contributing users are collected. The final, validated dataset is then converted to Darwin Core (DwC) format (Darwin Core Task Group 2009), making it compatible for its ultimate destination: publication on GBIF (Barve et al. 2024).

Keywords

citizen science, India, Lepidoptera, biodiversity monitoring, data quality control, Darwin Core, community science

Presenting author

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Author contributions

All authors contributed to writing. VB, SM and SD initiated the BBM project. VB, NB worked on data curation.

Conflicts of interest

The authors have declared that no competing interests exist.

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